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PATENT

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Box PATENT APPLICATION
TO THE ASSISTANT COMMISSIONER FOR PATENTS
Washington, D.C. 20231

Transmitted herewith for filing is the patent application of:

Inventor(s): Frank A. Lawler and Joseph H. Matthews III

For: INTERACTIVE PROGRAM SUMMARY PANEL

Enclosed are:

- ☒ 21 pages of specification, 4 pages of claims, an abstract and a Combined Declaration and Power of Attorney.
- ☒ 5 sheet(s) of formal drawings.

FILING FEE

For	Claims Filed	Number Filed	Number Extra	Rate	Basic Fee
Total Claims	20	20	= 0	\$18.00	\$ 00.00
Independent Claims	3	3	= 0	\$78.00	\$ 00.00
Multiple Dependent Claim Fee				\$260.00	
TOTAL FILING FEE					\$760.00

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Respectfully submitted,

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. 3382-51701/GAW

First Inventor or Application Identifier Frank A. Lawler et al.

Title Interactive Program Summary Panel

Express Mail Label No. EM295377974US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. ☒ * Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☒ Specification [Total Pages 26]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the invention
 - Brief Summary of the invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
3. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 5]
4. Oath or Declaration [Total Pages 2]
 - a. ☐ Newly executed (original or copy)
 - b. ☒ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 17 completed)
(Note Box 5 below)
 - i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
5. ☒ Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. ☐ Microfiche Computer Program (Appendix)
7. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Copy
 - b. ☐ Paper Copy (identical to computer copy)
 - c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))
9. ☐ 37 C.F.R. § 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
14. ☐ * Small Entity Statement(s) ☐ Statement filed in prior application, Status still proper and desired (PTO/SB/09-12)
15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
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17. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No: 08,969,979

Prior application information: Examiner N. Flynn

Group / Art Unit: 2711

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INTERACTIVE PROGRAM SUMMARY PANEL**CROSS REFERENCE TO RELATED APPLICATION**

This application is continuation of pending Application No. 08/969,979,
5 filed November 13, 1997, now allowed, which was a continuation of Application
No. 08/435,117, filed May 5, 1995, now abandoned.

FIELD OF THE INVENTION

The present invention relates to interactive television or televideo systems
and, in particular, to a method of providing viewers with information about
10 programming available on such systems.

BACKGROUND OF THE INVENTION

Conventional cable and satellite television transmission is evolving into
interactive television or televideo (IT) systems. IT systems combine the video
broadcast capability characteristic of conventional broadcast television with
15 computer-executed applications or programming responsive to input from viewers.

By some estimates, IT systems under development could include the equivalent of
500 channels of programming, including video broadcasting and applications.

Meaningful access to large amounts of interactive television programming
will require that viewers be able to obtain and comprehend vast amounts of
20 programming and scheduling information. Conventional printed programming
guides, such as T.V. Guide magazine or local newspapers, already provide only
incomplete programming information for cable television networks with as few as
50 channels. It is expected that complete printed programming guides for the
large amounts of programming in IT systems would be very large and expensive
25 and unacceptably cumbersome.

Some conventional cable television networks dedicate a channel to a

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25 The system requires the viewer to have special decoder equipment to intercept and

decode television program schedule information that is transmitted automatically during the vertical blanking interval of a conventional television signal.

Only a limited amount of television program schedule information may be encoded and broadcast during each vertical blanking interval. Many automatic
5 transmissions of this type are required to deliver all the program schedule information and supplemental text descriptions to the decoder equipment, where the decoded information is stored. The program schedule information and supplemental text descriptions can be displayed and viewed on demand after being loaded into the decoder equipment.

10 Transmitting the program information only automatically during the vertical blanking signal of a conventional television signal requires that the many fragments of program information be assembled over time in the viewer's decoder equipment. As a consequence, this system is limited to providing only brief text
15 listings. Moreover, the supplemental text descriptions provided by this system obscure much of the program schedule information and therefore requires that the viewer switch between viewing the program schedule information and the supplemental text descriptions.

Conventional cable television program guide services provide only the title
20 or brief test descriptions of the scheduled programming. Such extremely limited information typically requires supplementation by a printed video guide for a viewer to obtain meaningful program schedule information. In view of the expected shortcomings of printed schedule guides for IT systems and the limited information provided by conventional cable television program guides, IT systems
25 will require improved methods of providing program information to viewers.

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SUMMARY OF THE INVENTION

The present invention includes a method of displaying for a viewer summary information relating to programming available on an interactive television or televideo system. The IT system includes a central control node that delivers
5 programming to multiple subscribers or viewers. Each viewer has a video display set (e.g., a television receiver) and an associated interactive controller that is responsive to input from the viewer for controlling programming on the video display set.

With reference to a preferred embodiment, the method of this invention
10 includes obtaining a viewer selection indication corresponding to a program selected by the viewer from a programming guide. Based on the viewer selection indication, the IT system accesses summary information relating specifically to the program selected by the viewer. The summary information preferably includes a text description of the programming and display imagery relating to the
15 programming. The display imagery may include a still video image or a multi-frame video sequence of or relating to the programming, together with an associated audio segment. The display imagery could also include the programming as it is being broadcast.

The text description and the display imagery are rendered on the display
20 screen of the viewer's television receiver in a program summary panel that is positioned adjacent the programming guide from which the user selected the programming. The program summary panel includes a video preview window and a separate text window within which the respective display imagery and text description are rendered. The text window may also include one or more icons
25 indicating that the program has selected characteristics. The associated audio

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segment preferably relates to the selected programming.

The present invention provides detailed information about scheduled programming for an arbitrary number of programming channels. No printed scheduling information is required. The availability of multi-frame video previews or direct broadcast transmissions provides programming information that viewers have not previously been able to obtain for selected programming.

The foregoing and other features and advantages of preferred embodiments of the present invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

10 BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of an interactive television system used for the preferred embodiment of this invention.

FIG. 2 is a block diagram of an interactive station controller used for the preferred embodiment of this invention.

FIGS. 3A and 3B are respective block and stylized diagrams of a video display screen with a programming guide and a program summary panel of the present invention for summarizing selected programming.

FIG. 4 is a plan diagram of a viewer control unit for providing viewer input to the interactive station controller of FIG. 2.

FIG. 5 is a flow diagram of an interactive method of summarizing selected programming according to the present invention.

FIG. 6 is a diagram of a portion of a video display screen with exemplary icons for use in the program summary panel of FIG. 3.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

25 FIGS. 1 and 2 are directed to an interactive television or televideo (IT)

system 10 as an operating environment for preferred embodiments of the present invention. For purposes of simplicity and clarity, IT system 10 is described with reference to widely available systems and standards, including conventional analog television receivers and cable-based video networks.

5 It will be appreciated, however, that the particular components of IT system 10 may be implemented with a variety of conventions, standards, or technologies without departing from the underlying concepts of the present invention. The term televideo is used to emphasize the applicability of this invention beyond standard television-based systems. As two examples, the conventional analog
10 television receivers and cable-based video network referred to in FIGS. 1 and 2 could be implemented as digital video receivers and a satellite downlink transmission system, respectively.

FIG. 1 is a simplified block diagram of an interactive televideo (IT) system 10 having a central control node 12 that transmits programming over a network 14
15 to multiple viewer stations (e.g., homes) 16. The programming may include standard analog video broadcasts (e.g., NTSC, PAL or SECAM), digital or digitally encoded video broadcasts (e.g., MPEG1 or MPEG2), or digital information related to computer-executed applications.

Each viewer station 16 includes at least one video display set 18 (e.g., a
20 television receiver) and an interactive station controller 20, which is sometimes referred to as a set-top box. Although it is shown distinct from video display set 18, interactive station controller 20 could alternatively be integral with video display set 18.

Interactive station controllers 20 receive programming from central control
25 node 12 and control the associated video display sets 18 in accordance with the

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programming. Controlling video display set 18 of a conventional analog type may include, for example, delivering an analog video signal directly to video display set 18 for display, converting a digital video signal to a suitable analog form for display, or executing a computer application that includes displays on display set

5 18.

Interactive station controllers 20 transmit digital information to and receive digital information from central control node 12. The digital information typically relates to applications executed by processors residing at control node 12 and station controller 20, as described below in greater detail.

10 Preferably, network 14 carries bidirectional communication between station controllers 20 and central control node 12. Alternatively, communication between station controllers 20 and central control node 12 can be carried by different communication systems. For example, programming from central control node 12 to station controllers 20 could be carried on a satellite downlink while station

15 controllers 20 send information to central control node 12 on a terrestrial modem link. An exemplary embodiment of central control node 12 is described in greater detail below.

FIG. 2 is a simplified block diagram of an exemplary one of interactive station controllers 20 for controlling video display set 18 and communicating with

20 central control node 12. Station controller 20 includes an input 60 that delivers communication or information from central control node 12 to a communication interpretation system 62 having, for example, an analog television demodulator 62a, a digital video decoder 62b, and a digital network communication interface 62c.

25 Demodulator 62a functions as a conventional television tuner for selecting

one of multiple conventional analog video signals received from central control node 12 at input 60. Video decoder 62b functions as a digital equivalent of demodulator 62a for selecting one of multiple digital video signals received at input 60 from central control node 12. Network communication interface 62c
5 communicates with central control node 12 with digital information carried over baseband frequencies. The baseband frequencies may be below the conventional analog video signal frequencies, above the digital video signal frequencies, or between the frequencies of analog or digital video signals.

A central processing unit (CPU) 66 in conjunction with a memory system 68
10 controls operation of station controller 20. CPU 66 is responsive to an infrared receiver and decoder system 70 that receives user input from a hand-held viewer control unit 71 (FIG. 4) and delivers the input to CPU 66. For example, CPU 66 controls selection of analog- or digital-based programming or applications delivered from central control node 12, accesses, activates, or executes selected
15 applications, or delivers information to or requests information from central control node 12.

A graphics subsystem 72 is controlled by CPU 66 to form graphics images, including interactive system user interface images, on video display set 18. A video processor subsystem 74, also controlled by CPU 66, provides control in the
20 rendering of video imagery, including decompressing digital video signals and sizing and positioning a video display window. A mixer 76 receives a video display signal from video processor subsystem 74 and graphics image signals from graphics subsystem 70 and delivers a mixed image signal to video display set 18. Mixer 76 provides compositing, masking and blending of display signals from two
25 or more image sources such as, for example, a digital video signal and locally-

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generated graphics or an analog video signal and a bitmap image received from central control node 12.

FIGS. 3A and 3B show a display screen 78 of one of video display sets 18 with a program summary panel 80 of the present invention rendered thereon.

- 5 Program summary panel 80 preferably is displayed in conjunction with a programming guide 82 that displays programming available for a particular date over a selected time range. Programming guide 82 includes a channel panel 84 identifying multiple particular channels or services (e.g., four channels or services), a time panel 86 listing particular times (e.g., a two hour time period in
- 10 30 minute increments), and a program grid 87 of program tiles 88 listing titles of programming on the identified channels at the listed times.

- Referring to FIG. 4, viewer control unit 71 includes an infrared transmitter window 89 through which control unit 71 emits infrared signals to infrared input
- 70 of station controller 20. A directional control keypad 90 allows a viewer to
- 15 transmit signals for moving a cursor (i.e., an indication of position) between tiles 88 on programming grid 86.

- The cursor may be rendered on display screen 78 as a graphic character or icon or by changing the graphic characteristics of the program tile 88 where the cursor is positioned. The programming identified in a program tile 88 to which a
- 20 viewer moves the cursor indication is referred to as being focused upon by the viewer or as focussed programming. The viewer may initiate or activate selections by depressing an action key 91 and may enter numeric values with numeric key pad 92.

- Interactive station controller 20 generates a program summary panel 80 of
- 25 the present invention for the programming focused upon by a viewer. Program

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summary panel 80 includes a preview display window 94 within which interactive station controller 20 renders display imagery relating the focussed programming. The display imagery may include currently available video programming, an on-demand video clip or segment, or a still image, as described below in greater detail.

A text description window 96 displays a program title (preferably of a distinct font), a text description of the program, and one or more information icons relating to selected characteristics of the programming. Preferably, station controller 20 also provides an audio segment related to the selected programming.

FIG. 5 is a flow diagram showing an interactive method of displaying a summary of programming available on IT system 10.

Process block 100 indicates that program schedule information for a predetermined period is retrieved by interactive station controller 20 from an electronic programming guide (EPG) database 102 in central control node 12.

The program schedule information includes, for example, program titles, broadcast times, and assigned channels, for a period of, for example, twenty-four hours. Interactive station controller 20 stores the program schedule information in memory system 68. Interactive station controller 20 preferably retrieves the program schedule information upon startup and at periodic intervals after startup.

Process block 104 indicates that interactive station controller 20 displays a programming guide 82 on video display set 18. Preferably, central processing unit 66 cooperates with graphics subsystem 72 and the program schedule information stored in memory system 68 to render a graphic programming guide 82 of the type shown in Fig. 3.

Process block 108 indicates that a viewer selects or focuses upon a program

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tile 88 in programming guide 82 as described above, for example.

Process block 110 indicates that interactive station controller 20 accesses summary information about the programming focused upon by the viewer.

Process block 114 indicates that a summary text description of the selected programming and pointers to icons summarizing any selected information about the programming is retrieved from a memory included in IT system 10.

Preferably, station controller 20 periodically (e.g., daily or weekly) receives from EPG database 102 summary text descriptions and related icon bitmaps for a predetermined time period and stores them in memory system 68. Station controller 20 retrieves from memory system 68 summary text descriptions and related bitmaps of any icons pointed to and displays the icons and summary text description for the viewer.

Alternatively, station controller 20 can retrieve from EPG database 102 the summary text descriptions and related bitmaps of icons that are not available in local memory 68 for the program tile 88 selected or focused upon by the viewer. Circumstances in which the summary text descriptions and related bitmaps of icons would not be available in local memory 68 include, for example, the viewer selecting a program tile 88 outside the predetermined time period for which the information is stored in memory 68, a video, graphic, or audio segment being associated with the information, or the information in memory 68 requiring an update or correction.

Decision block 116 represents an inquiry as to whether the selected programming is currently being broadcast and available to the user. Availability of the selected programming relates, for example, to whether the viewer is a subscriber to the selected programming. Decision block 116 proceeds to process

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block 118 whenever the selected program is currently being broadcast and available to the user and otherwise proceeds to process block 120.

Process block 118 indicates that communication system 62 tunes to the selected programming and displays it on video display set 18 within preview display window 94 of program summary panel 80. Video processor subsystem 74 functions to size and position the selected programming within preview display window 94.

Process block 122 indicates that central control node 12 retrieves preview media information from EPG database 102 or, alternatively, from memory 68 of station controller 20. The preview media information indicates whether the preview or display imagery available for the selected programming includes a video clip or segment of or relating to the selected program or a still image of or relating to the selected programming.

Decision block 128 represents an inquiry as to whether a digitized preview video clip or segment is available for the selected programming. Decision block 128 proceeds to process block 130 whenever a digitized video clip or segment is available and otherwise proceeds to process block 132.

Process block 130 indicates that the digitized video clip or segment is cued from an electronic programming guide (EPG) preview server computer at central control node 12 and transmitted to interactive station controller 20 for display to the viewer.

Preferably, the digitized video segment relates to the specific episode of the selected programming. If an episode-specific segment is not available, the digitized video segment preferably relates to any program series of which the selected programming episode is a part. If a series-specific segment is not

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available, the digitized video segment preferably relates to the channel carrying or broadcasting the selected programming.

Process block 132 indicates that a digitized still image is retrieved from EPG database 102 and transmitted to interactive station controller 20 for display to the viewer. Preferably, the still image relates to the specific episode of the selected programming. If an episode-specific still image is not available, the digitized still image preferably relates to any program series of which the selected programming episode is a part. If a series-specific still image is not available, the digitized still image preferably relates to the channel carrying or broadcasting the selected programming.

Decision block 134 represents an inquiry as to whether the viewer has selected or focused on a different program tile 88. Decision block 134 returns to process block 110 if the viewer has selected or focused on a different program tile 88 and otherwise proceeds to end block 136.

A digitized audio segment may be retrieved from EPG database 102 for playing with each digital video segment or still image. The audio segment may include one or more of a voice announcement, an audio portion of the selected programming, or music. The accessing and retrieval of audio segments would be substantially the same as the accessing and retrieval of still images or digitized video segments.

Preferably, the audio segment relates to the specific episode of the selected programming. If an episode-specific segment is not available, the digitized audio segment preferably relates to any program series of which the selected programming episode is a part. If a series-specific segment is not available, the digitized audio segment preferably relates to the channel carrying or broadcasting

the selected programming.

The method described above is directed to an IT system 10 in which selected information is stored at and retrieved from EPG database 102 or EPG preview server 131 at central control node 12. The benefits of the present invention could
5 also be achieved in IT systems having some or all of the selected information stored at and retrieved from interactive station controllers.

The availability of text description, information icons, and display imagery for use in program summary panel 80 is based upon an electronic programming guide (EPG) database managed within central control node 12, as described below
10 in greater detail. The EPG database preferably includes the following tables:

- i) an episode table containing records for each interactive or broadcast
televideo episode;
- ii) a series table containing records for each interactive or broadcast series;
- iii) a still image table comprising bitmaps or vector graphic definitions of
15 still-image previews or pointers to computer files containing such still-image
previews;
- iv) an audio table containing digitized audio digital wave synthesis
definitions or MIDI (Musical Instrument Digital Interface) note and timing
definitions of music and voice-over previews or pointers to computer files
20 containing such audio previews;
- v) an audio/video table containing digitized video and audio, either in
MPEG, AVI, Quicktime or other digital video format for full-motion video
and audio storage, or pointers to computer files containing such video
previews;
- 25 vi) a tuning information table containing broadcast, cablecast or satellite

transmission tuning information for channel lineups available to viewers,
including network and affiliation information; and

- vii) a programming characteristic table containing broadcast properties or characteristics such as closed captioning and viewer discretion advised,
5 which include pointers to image definitions of associated descriptive icons.

Within the EPG database, each programming event or episode record is linked to a parent series record. One-time programming events or specials have a single episode record linked to a single series record. Each episode record can have pointers to episode preview or display imagery in still image, audio, or
10 multi-frame digital video format. Each episode may also be linked to selected broadcast properties that identify selected characteristics of the episode.

Similarly, each series record may have pointers to previews or display imagery relating to the series in still image, audio, or multi-frame digital video format, or selected broadcast properties that identify selected characteristics of the
15 series. Also, each channel record may have pointers to previews or display imagery relating to the channel in still image, audio, or multi-frame digital video format, or selected broadcast properties that identify selected characteristics of the channel. The term channel refers to a provider of programming and can include, for example, a broadcast network or an application provider.

- 20 Retrieval of text description, information icons, and preview display imagery entails correlating the programming selected or focused upon by the viewer with the corresponding episode record. Any pointers in the record to program summary information are tracked and the information is retrieved. If no pointers to program summary information are associated with the episode, the
25 programming selected by the viewer is correlated with the corresponding series

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record in the series table. Any pointers to series-specific program summary information are tracked and the information is retrieved.

If the series record contains no pointers to program summary information, a default still image or graphic retrieved for rendering within preview window 94.

- 5 The default still image may be a channel-specific image or graphic for the channel carrying or transmitting the selected programming or a predetermined IT system or EPG image or graphic.

Table 1 below lists the preferred display imagery rendered in preview display window 94 of program summary panel 92 for different types of

- 10 programming on IT system 10. The display imagery in preview display window 94 preferably is the currently broadcasting programming for focused programming available to the viewer. Programming available to the viewer includes the programming to which the viewer subscribes, including premium programming services.

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TABLE 1

Type of Service/ Channel Selected	Broadcast Preview	Continuous Media Server Preview	Still Preview
Audio on demand	NO	If bandwidth available	YES
Current or future PPV broadcast	If limited in some way (for example timed preview, disabled audio or alternate audio track)	If bandwidth available	Likely
Current broadcast (not PPV)	Always	NO	NO
Electronic Program Guide	NO	NO	YES
Future broadcast (not PPV)	NO	First choice if bandwidth available	Second choice
Interactive service	NO	First choice if bandwidth available	Second choice
Past broadcast (PPV/Continuous Media Server archive)	NO	First choice if bandwidth available	Second choice
NVOD service	First choice - asynchronous loop	NO	Second choice - still carousel
VOD service	NO	First choice if bandwidth available	Second choice

Rendering the selected programming in preview display window 94 could also be used in connection with current or future pay-per-view (PPV) broadcasts, if the preview were limited until the viewer elects or subscribes to the broadcast. An asynchronous loop of broadcast previews could be rendered in preview display window 94 for near-video-on-demand (NVOD) services.

An asynchronous loop of broadcast previews could include non-specific

video segments or trailers, or service advertisements, delivered simultaneously to all viewers and thus requiring no media server load or dedicated media server channels. A broadcast preview could be implemented for each of the other listed services with an asynchronous loop of broadcast previews carried on a dedicated
5 channel.

Video clips or segments of multiple frames would preferably be rendered in preview display window 94 for future non-PPV broadcasts, interactive services such as news-on-demand or an interactive game service, past broadcast services, video-on-demand (VOD) services, and if, bandwidth is available on network 14,
10 audio-on-demand and current or future PPV broadcasts. In connection with all types of service, still images could be rendered in preview display window 92 as a system backup or due to limited system capability.

Fig. 6 is a front view of a display screen 78 of an exemplary video display set 18 showing icons 150 that are selectively rendered individually or together
15 within the text description window 94 of program summary panel 90. It will be appreciated that icons 150 are exemplary and that different icons representing the same or different information may be used in accordance with the present invention.

A VCR record icon 152 indicates that the selected program has been cued by
20 the viewer for future recording by a video cassette recorder (VCR) at the viewer's station 16. A reminder icon 154 indicates that the selected program has been cued by the viewer for generating a reminder briefly before the start of the program. A re-run icon 156 indicates that the selected program is a re-run (i.e., a re-broadcast) of a first-run program series.

25 Closed captioning icon 158 indicates that the selected programming includes

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closed captioning text for hearing-impaired viewers. Audience rating icon 160 (as shown as an exemplary PG-13 rating) represents an audience rating applied to a motion picture by the Motion Picture Advisory Association, or other indications such as "viewer discretion advised". Awards icon 162 indicates that the selected programming is an award program such as, for example, the motion picture Academy Awards. Star rating icons 164 represent critical ratings as applied, typically, to motion pictures.

Stereo icon 166 identifies the selected programming as including a stereo audio component. Live icon 168 indicates that the selected program is a live broadcast. Premium icon 170 indicates that the selected programming is a part of a premium or surcharge service available over network 14. Interactive icon 172 identifies the selected programming as an interactive show or service. In addition to icons 150, it will be appreciated that other icons could be used to identify selections of interactive system services, specialized audio capabilities (e.g., Dolby® or THX®), or customized program-specific icons identifying, for example, college or professional sports.

Preferably, icons 150 are stored at central control node 12 as bitmap files and downloaded to interactive station controller 20 in response to pointers or other indicators associated with the text summary description information. Icons 150 are generated within text description window 94 in cooperation with graphics subsystem 72 of station controller 20.

Referring to FIG. 1 central control node 12 includes a digital local area network (LAN) 200 with multiple computer servers 202 for performing various interactive system applications or functions. Servers 202 include, for example, multiple state-of-the art microprocessors that operate in parallel and access or

control data storage devices with large data capacities. A digital communication gateway 204 couples LAN 200 to a wide area network (WAN) (not shown) for obtaining and delivering IT system information.

Servers 202 may include, for example, service and application servers 202a
5 and continuous media servers 202b. Service and application servers 202a process interactive service requests from subscribers and provide services and applications associated with operation of IT system 10. Service and application servers 202a may be dedicated to particular applications such as an electronic programming guide for viewers, network security, monitoring, object storage, financial
10 transactions, data access, and other administration functions.

Continuous media servers 202b provide storage and on-demand or near on-demand delivery of digitized video information. The digitized video information can include video programming of substantially any duration ranging from individual image frames and brief video clips to full-length motion pictures.

15 Servers 202 communicate with station controllers 12 via a network communication switch 208, such as an asynchronous transfer node (ATM) switch. For communication from servers 202 to station controllers 20, network communication switch 208 arranges digital information received from servers 202 in a standard bidirectional digital communication format for transmission over
20 network 14. For communication from station controllers 12 to servers 202, network communication switch 208 converts digital information from the standard bidirectional digital communication format for delivery to servers 202.

Digital information from servers 202 is frequency modulated by a digital modulator system 210 for transmission over network 14. Digital information that
25 includes video programming is preferably modulated at frequencies greater than

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the standard analog television frequency range, which is 50-450 MHz under the NTSC television standard. Digital information that does not include video programming may be modulated at baseband frequencies that are less than the standard analog television frequency range.

- 5 A multiplexing system 212 receives and mixes the frequency modulated digital information from modulator system 210 and standard analog video signals obtained from a standard analog video feed 214 and delivers an IT composite signal to interactive network 14. Analog video feed may be or include a satellite downlink, a cable receiver, or any locally generated programming. A reverse
- 10 channel receiver system 218 receives and demodulates digital communications from station controller 20 for processing by servers 202.

- Having illustrated and described the principles of the present invention in a preferred embodiment, it should be apparent to those skilled in the art that the embodiment can be modified in arrangement and detail without departing from
- 15 such principles. Accordingly, we claim as our invention all such embodiments as come within the scope and spirit of the following claims and equivalents thereto.

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WE CLAIM:

1. In an interactive televideo system having a central control node in
bidirectional communication with plural viewer stations that include video display
sets operably coupled to interactive station controllers, the central control node
5 delivering video programming over multiple channels to the plural viewer stations
and receiving information from the interactive station controllers, the system
including a programming guide from which viewers select programming, a
method of displaying for a viewer summary information relating to programming
included in the programming guide, comprising:
- 10 obtaining a user selection indication corresponding to programming selected
by the viewer from the programming guide;
- accessing in accordance with the user selection indication summary
information relating to the programming selected by the viewer; and
- displaying the summary information for the viewer on a video display set.
- 15 2. The method of claim 1 in which the summary information includes a text
description relating to the programming selected by the viewer.
3. The method of claim 2 in which the displaying of the summary
information includes displaying the text description in a text description window.
4. The method of claim 1 in which the summary information includes
- 20 display imagery relating to the programming selected by the viewer.
5. The method of claim 4 in which the displaying of the summary
information includes displaying the display imagery in a preview display window.
6. The method of claim 4 in which the display imagery includes a multi-
frame video segment relating to the program selected by the viewer.
- 25 7. The method of claim 6 in which the selected programming is transmitted

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from the central control node when the programming is selected by the viewer and the multi-frame video segment includes the transmitted selected programming.

8. The method of claim 6 in which the multi-frame video segment includes a preselected video segment that relates to the selected programming and is less
5 than the entire selected programming.

9. The method of claim 4 in which the display imagery is a single image frame relating to the programming selected by the viewer.

10. The method of claim 1 in which the summary information includes a text description and display imagery relating to the program selected by the
10 viewer.

11. In an interactive video system having a central control node in bidirectional communication with plural viewer stations that include video display sets operably coupled to interactive station controllers, the central control node delivering video programming over multiple channels to the plural viewer stations
15 and receiving information from the interactive station controllers, the system including a programming guide from which viewers select programming, a method of displaying for a viewer summary information relating to programming included in the programming guide, comprising:

storing in a memory associated with the interactive video system
20 programming summary information that relates to available programming available to a viewer and includes video segments relating to the available programming;

obtaining an indication of programming selected by the viewer from the programming guide;

retrieving from the memory the programming summary information
25 corresponding to the programming selected by the viewer from the programming

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guide; and

displaying the programming summary information for the viewer on a video display set.

12. The method of claim 11 in which the memory associated with the
5 interactive video system is included in the central control node, the indication of
programming selected by the viewer from the programming guide is transmitted
by the interactive station controller to the central control node, and displaying the
summary information for the viewer on a video display set includes transmitting
the program summary information from the central control node to the interactive
10 station controller associated with the video display set.

13. The method of claim 11 in which the summary information further
includes a text description relating to the programming selected by the viewer.

14. The method of claim 13 in which the text description and video segment
are displayed in, respectively, a text description window and a preview display
15 window that are displayed adjacent each other.

15. The method of claim 11 in which the programming summary
information is displayed simultaneously with the programming guide.

16. The method of claim 11 in which the programming summary
information displayed for the viewer includes an icon indicating a predetermined
20 characteristic of the selected programming.

17. The method of claim 16 in which the predetermined characteristic of the
selected programming is selectively cued by the viewer.

18. In an interactive video system having a central control node in
bidirectional communication with plural viewer stations that include video display
25 sets operably coupled to interactive station controllers, the central control node

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delivering video programming over multiple channels to the plural viewer stations and receiving information from the interactive station controllers, the system including a programming guide listing programming available to a viewer, a memory associated with the interactive video system, comprising:

- 5 programming summary information that relates to programming available to a viewer and includes multi-frame video segments relating to the available programming.

19. The memory of claim 18 in which the programming summary information further includes a text description relating to the programming
10 available to the viewer.

20. The memory of claim 18 in which the programming summary information further includes a still image relating to the programming available to the viewer.

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ABSTRACT OF THE DISCLOSURE

The present invention includes a method of displaying for a viewer summary information relating to programming available on an interactive television or teletext system. In a preferred embodiment, the method includes obtaining a user selection indication corresponding to a scheduled program selected by the viewer from a programming guide. Based on the user selection indication, the interactive television system accesses summary information relating specifically to the program selected by the viewer. The summary information preferably includes a text description of the programming and display imagery relating to the programming. The display imagery may include a multi-frame video sequence of or relating to the programming or a still video image.

FIG. 1

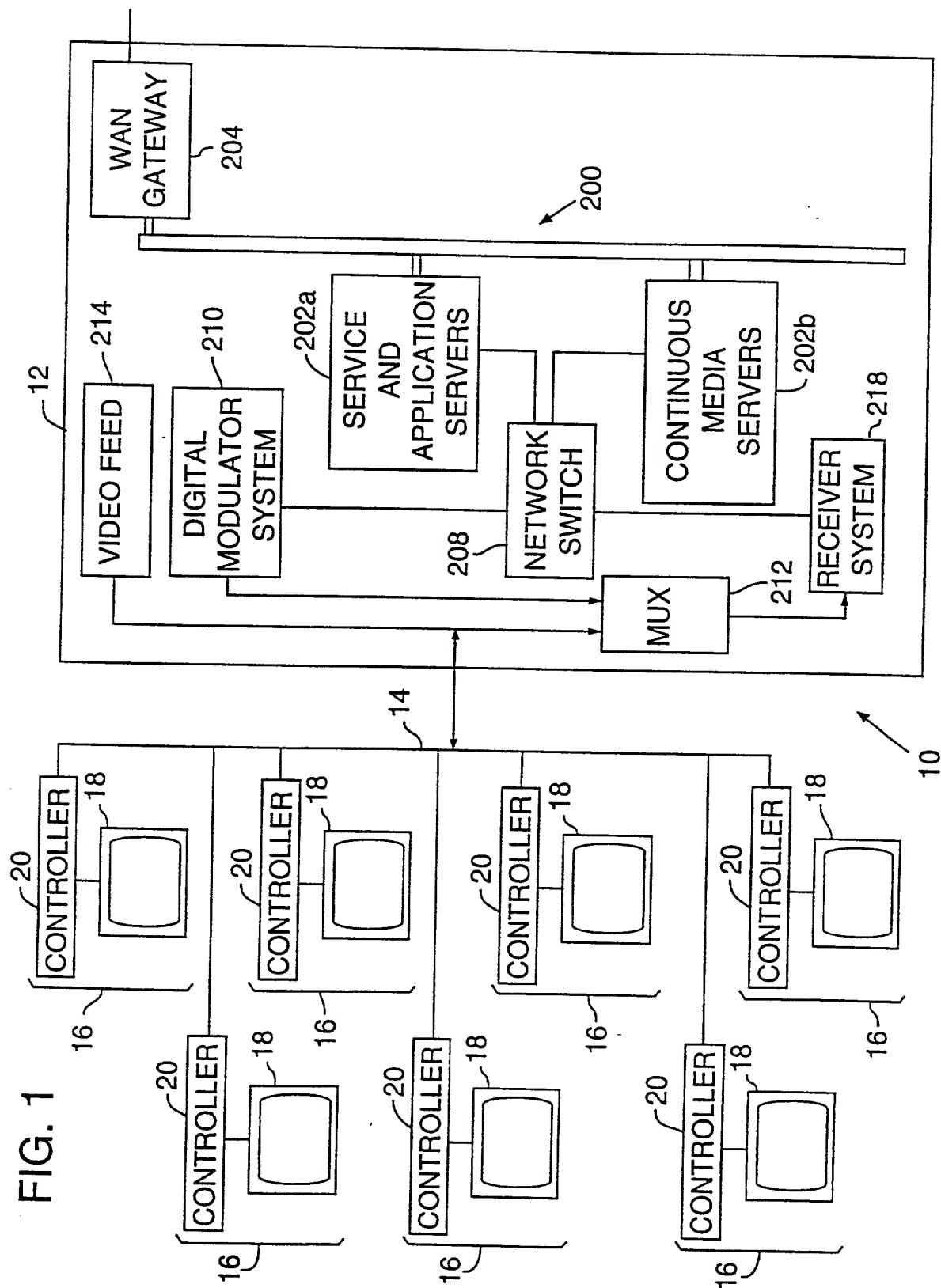


FIG. 2

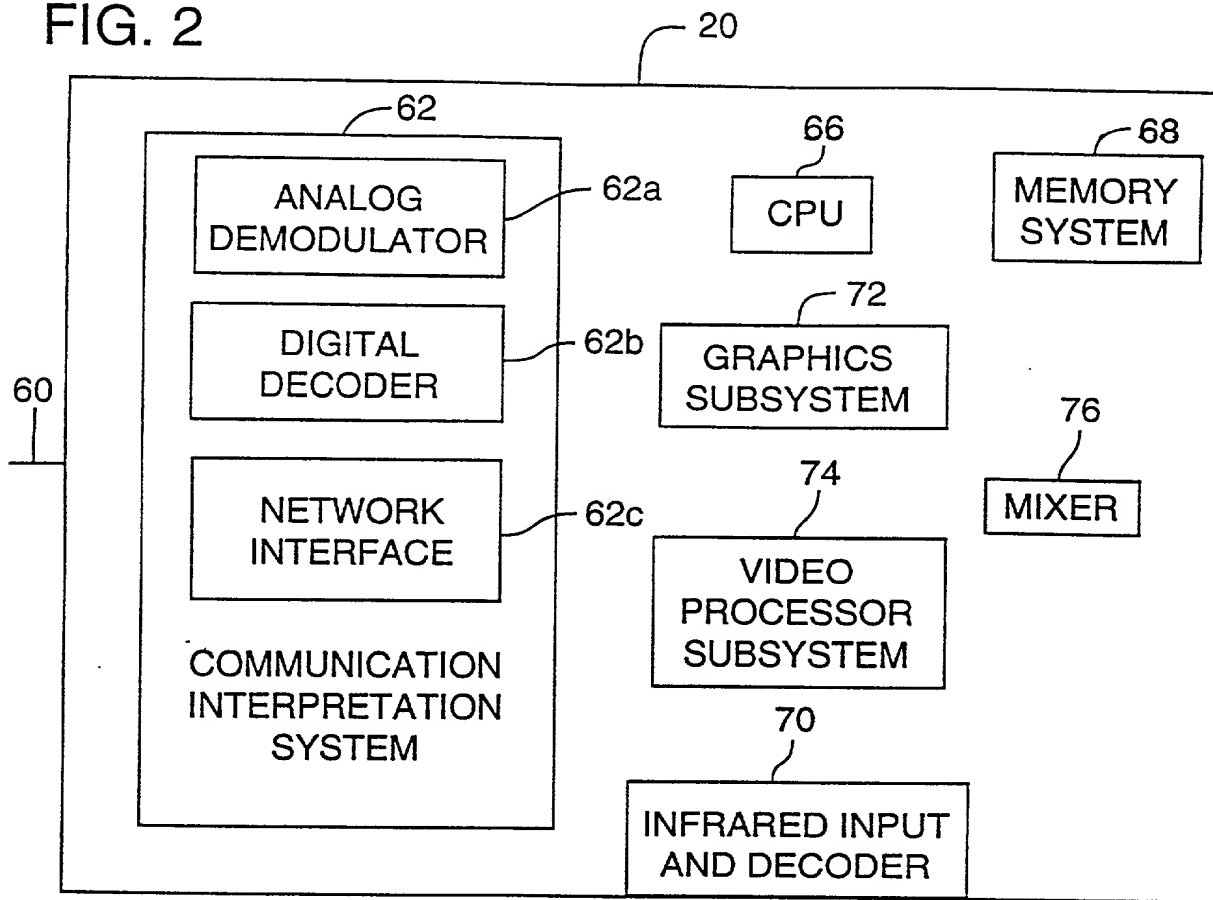


FIG. 6

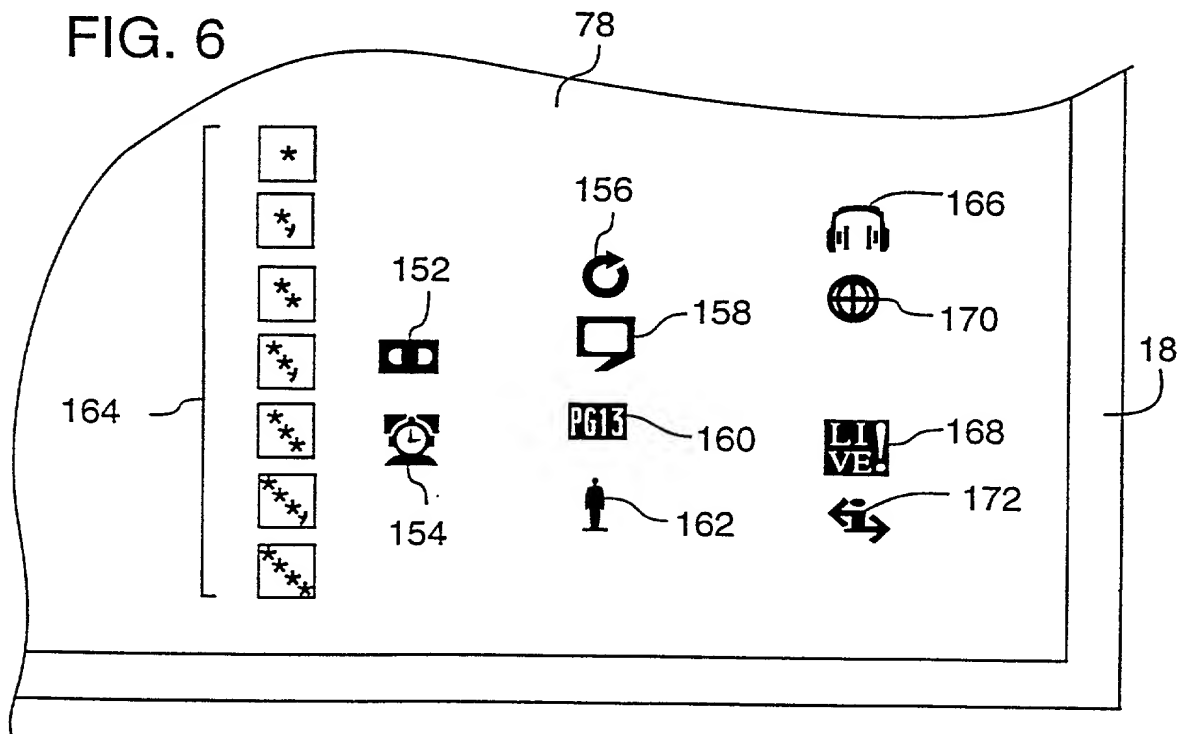
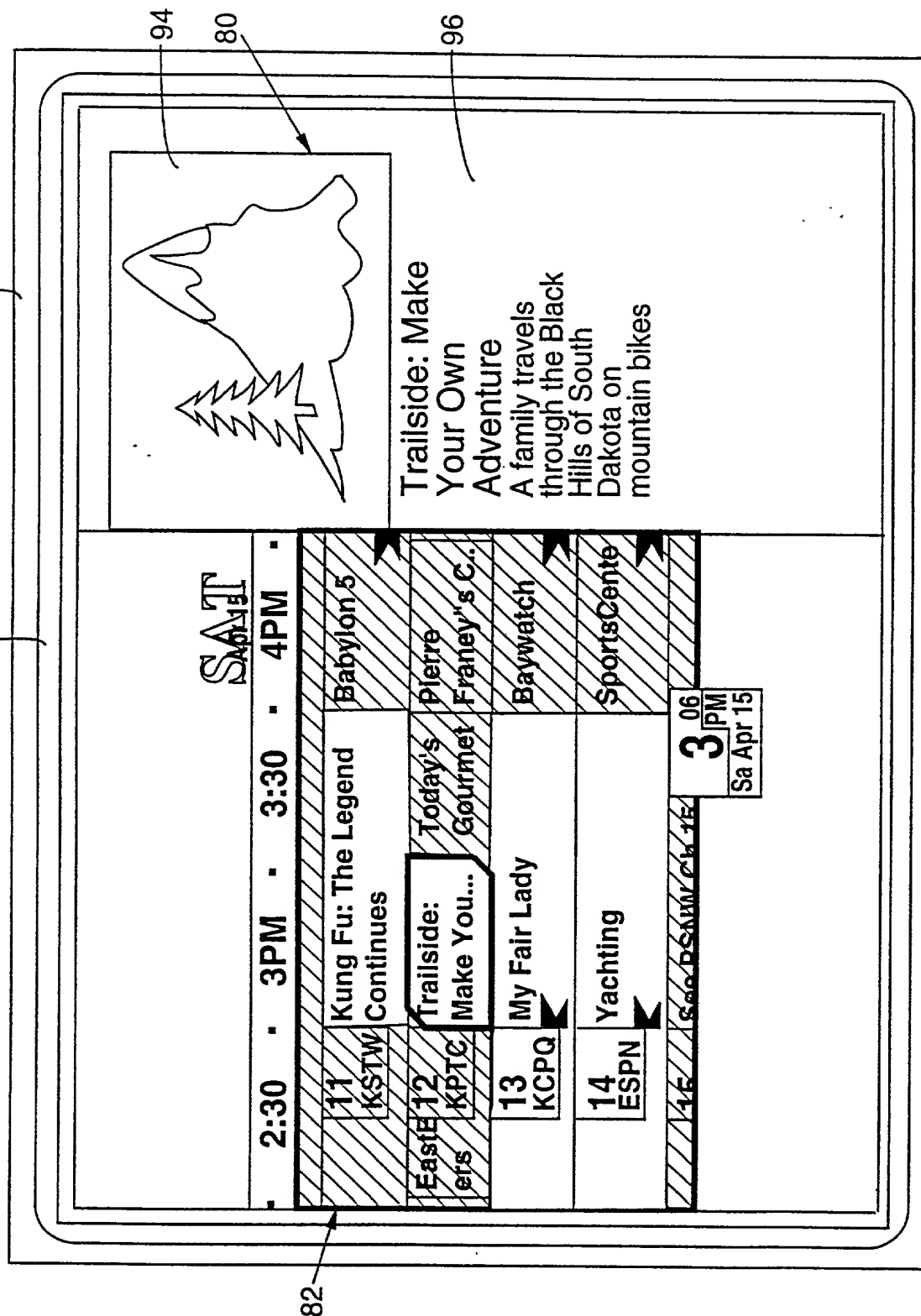


FIG. 3B

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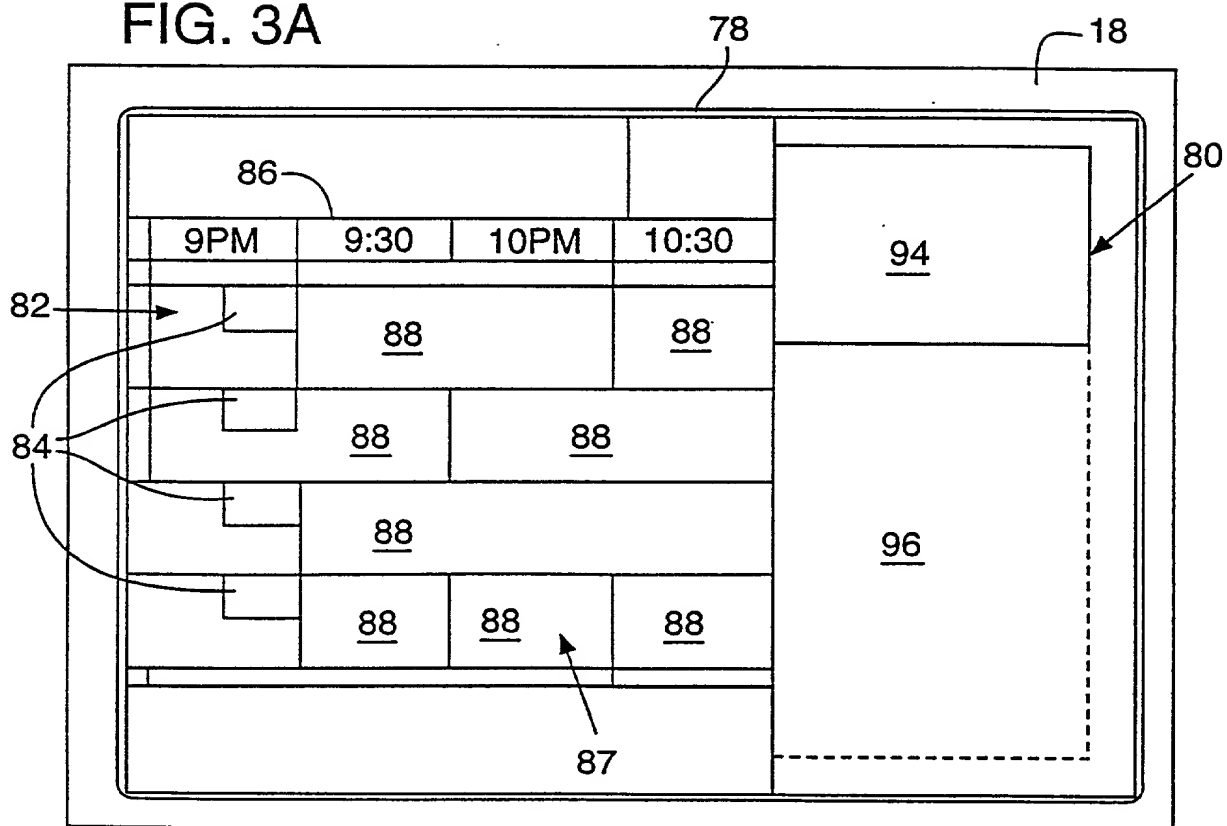
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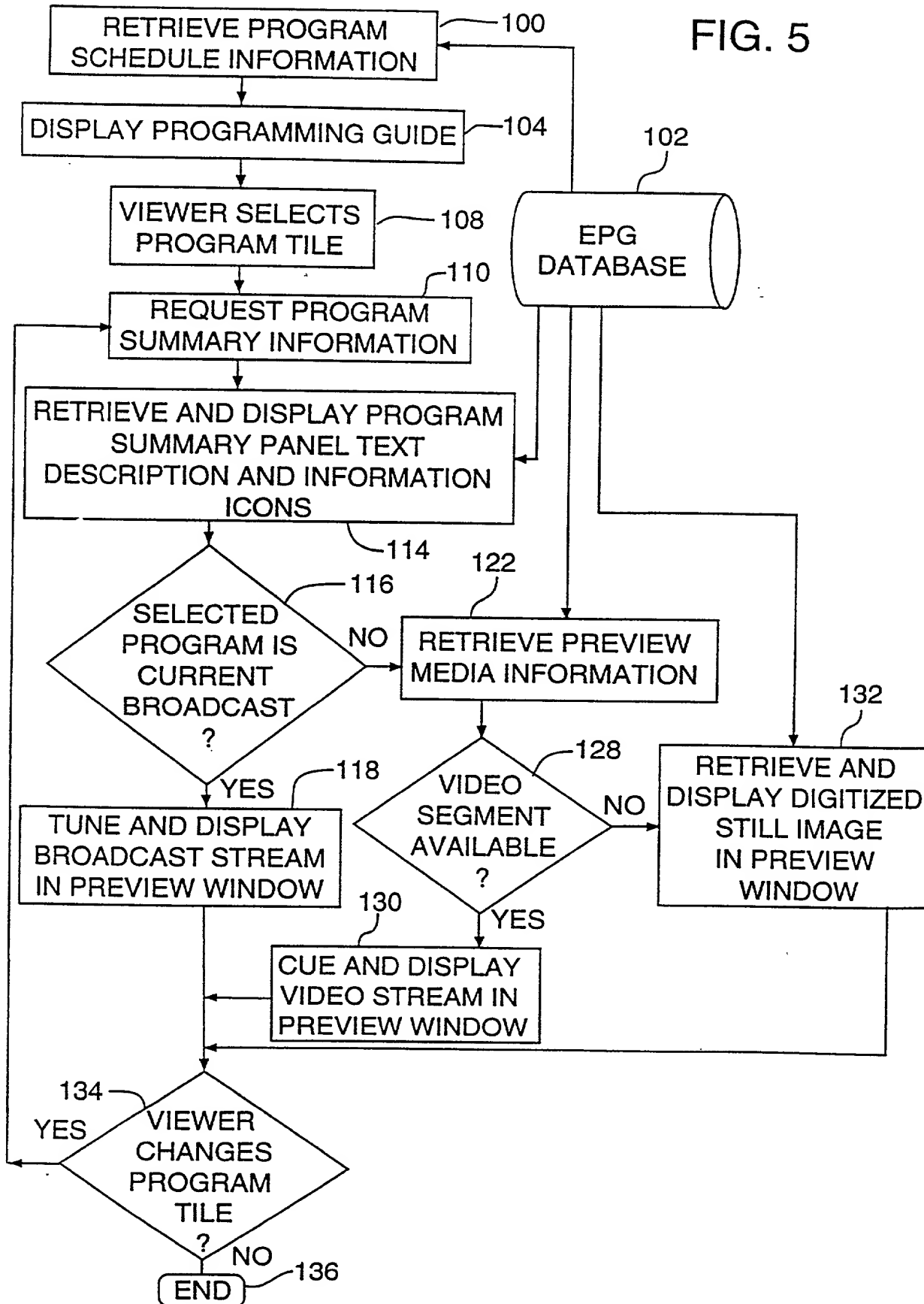
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FIG. 3A



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FIG. 5



COMBINED DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled Interactive Program Summary Panel, the specification of which

☐ is attached hereto.

☒ was filed on May 5, 1995 as Application Serial No. 08/435,117.

☐ and was amended on _____ (if applicable).

☐ with amendments through _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a). If this is a continuation-in-part application filed under the conditions specified in 35 U.S.C. §120 which discloses and claims subject matter in addition to that disclosed in the prior copending application, I further acknowledge the duty to disclose material information as defined in 37 CFR §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from _____ as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In

the event of a change in the persons from whom instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application, to file a corresponding international application, and to transact all business in the Patent and Trademark Office connected therewith:

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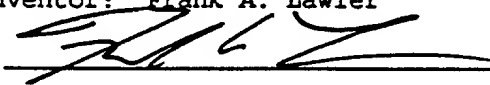
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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